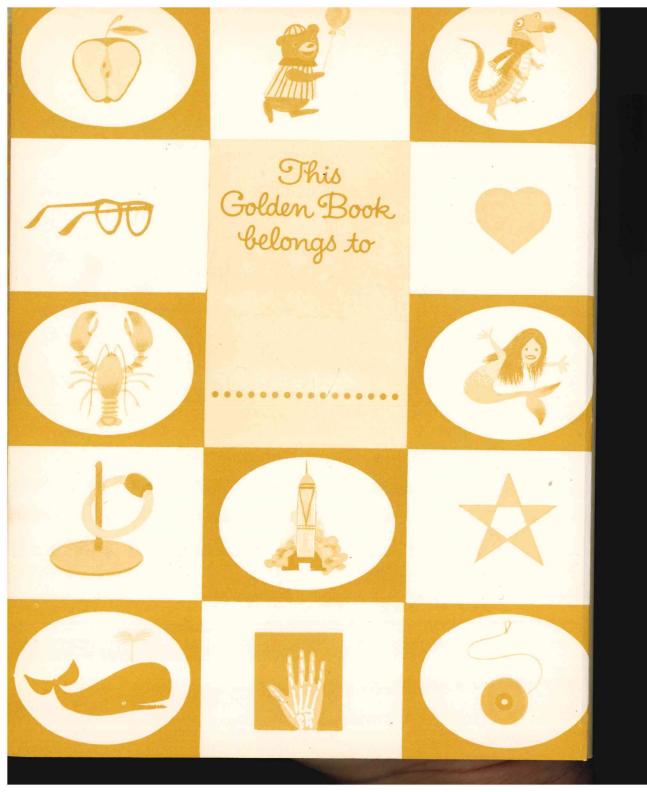
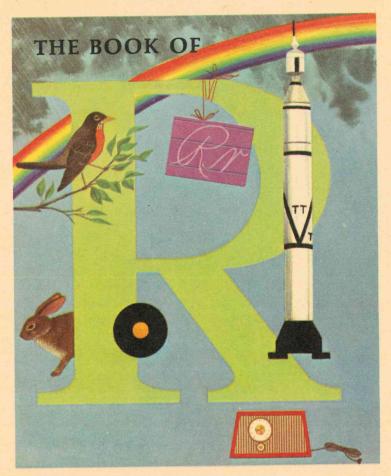


This book is all about radios and railroads, rainbows and rockets, and lots of other exciting R's.

a Golden Book



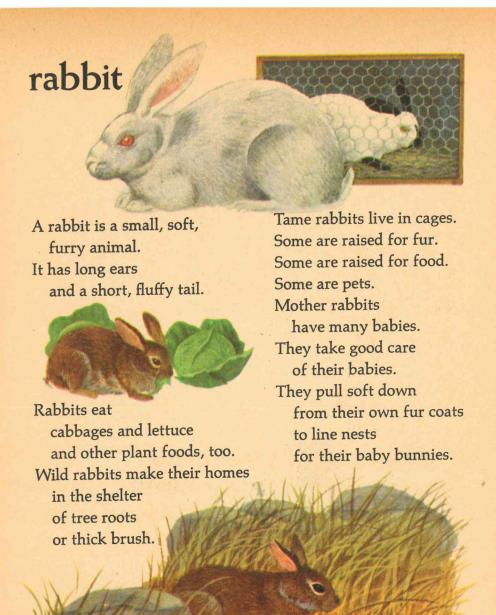
MY FIRST GOLDEN LEARNING LIBRARY



CONSULTANT · BERTHA MORRIS PARKER

BY JANE WERNER WATSON · PICTURES BY
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radio



We hear music and voices from far away over the radio.
We say a radio program is broadcast.

"throw in all directions."

Most radio programs start
in a broadcasting studio.



The entertainers speak or sing into a microphone.

Or an orchestra plays with a microphone in front of it.

The speaking, singing, or playing sets up waves in the air.

We call these waves "sound waves."

(See sound in the second S book.)

The sound waves affect a tiny electric current in the microphone.

This electric current is made stronger.

It is sent up a transmitter tower.

From the tower radio waves speed out.

Some of the waves strike the antenna of your radio set.

They set up an electric current in it.

If the radio is turned on you can turn a knob and tune in to the program.

The sounds you hear come from the loudspeaker of your radio.

Radio waves travel so fast that you can hear a program at the very same time it is being broadcast!





railroad

A railroad has a road or track made of steel rails. The rails are nailed down to wooden beams called ties.



The ties are laid on a bed made of gravel and cinders.

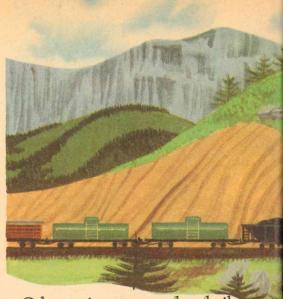
Trains run on the track.

Locomotives pull the trains.

(See locomotive in the L book and travel in the T book.)

Some of the trains carry people.

They are passenger trains.

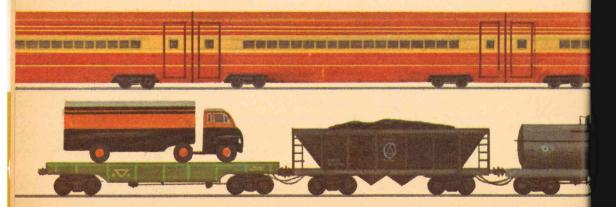


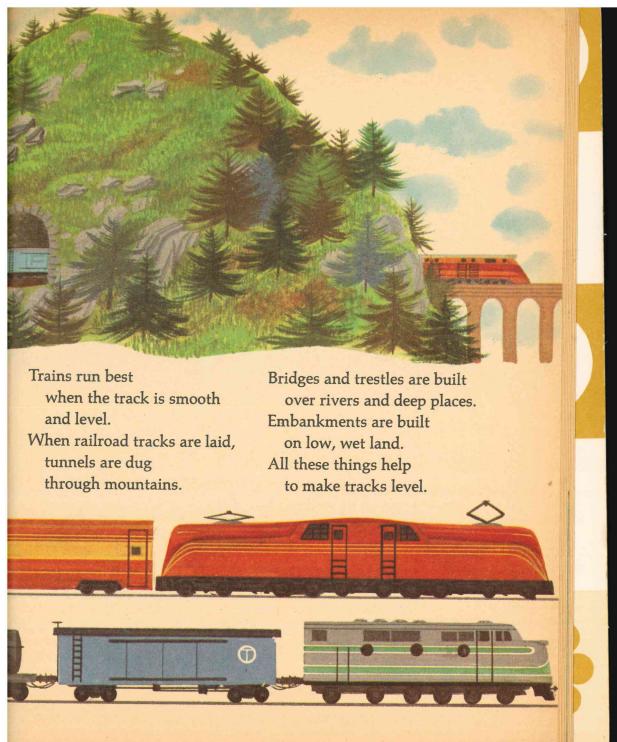
Other trains carry coal and oil, fruits and vegetables, cattle and machinery.

They carry all sorts of loads.

They are freight trains.

The rims of a train's wheels fit over the steel rails of the track.





Many trains run
on the same track.
Here are two trains.
They are coming
toward each other
on the same track.
Will there be a wreck?
No.
One train comes to a switch.

Some signals tell him to go slow.

Some tell him to stop.

Some tell him the track
is clear.

Some signals have colored arms.

They are called semaphores

Some signals have colored arms.
They are called semaphores.
Some signals have colored lights.
Signals help keep the trains
running safely.



onto a short side track called a siding.

The track will be clear for the other train.

Soon the first train will back up onto the main track again and go chugging on its way.

There are signals along the track.

Signals tell the engineer

along the track.
Signals tell the engineer
of a train
what to do.

The men who work on a train are called the train crew.

There is a fireman to help the engineer.

There are brakemen and conductors.

If it is a passenger train and there is a dining car, there are waiters and cooks.

And there is a steward in charge.

If there are sleeping cars,
there are porters

to take care of them.

Some railroad men keep the track in good shape. They are called section hands.



Some railroad men work in the stations.

They take care of baggage and tickets.



Some railroad men
look after railroad cars
and locomotives
between runs.
These men work
in the railroad yards.

A railroad yard
is full of tracks.
It has many switches
and sidings.
It has small switch engines
to move cars around.

It has turntables, too.



The turntables
turn locomotives around.
A locomotive is driven
onto a turntable.

The "table" turns around with the locomotive on it until it heads in the right direction.

The turntable may be in a building called a roundhouse.

Locomotives stay
in the roundhouse
until their next run.

A railroad has many, many kinds of work for railroad men to do.

rain



Rain falls from clouds.
A rain cloud is made of water.
The water is in tiny droplets.
Sometimes many tiny droplets
gather into a big drop.
The drop is too heavy
to float in the cloud.
It falls to earth.
It is a drop of rain.
If raindrops fall
through very cold air,
they may freeze.
They fall to earth
as sleet.
If the air around a cloud

is very, very cold,
ice crystals form
instead of raindrops.
They fall to earth as snow.



Plants need water
to help them stay alive
and grow.
The roots of a plant
get the water
the plant needs
from the ground.



Where rain falls or snow melts water soaks into the ground. It is ready for plants to use. Where there is very little rain and no other way of getting water, few plants grow. The ground is too dry for most plants. We say the land is a desert. (See desert in the D book.) But it can rain too much. Then there may be a flood. (See *flood* in the F book.) Rain can be good or bad. It is not good for a picnic!

rainbow

We often see a rainbow
if it rains
while the sun is out.
All the colors of the rainbow
are in sunlight.

When sunlight falls on raindrops, its colors separate.

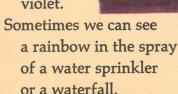
We see them arch in bands across the sky.

The order of the colors is always the same—

red orange yellow

green

blue violet.



rain clothes

It is fun
to go out in the rain.
But when we do,
it is best to be dressed
for the rain.

Rubbers or boots keep our feet dry.



Rain hats or plastic hoods keep our heads dry.

Raincoats keep most of our clothing dry.

Some raincoats are called ponchos.

You pull a poncho over your head to put it on.

When it rains, some people carry umbrellas to keep the rain off.



A ranch is a big farm for raising cattle or sheep. On a cattle ranch, cowboys look after the cattle.

The cattle wander over the land, eating grass.

We call this grazing on the range.

Cowboys often ride the range to see that the cattle are safe and healthy.



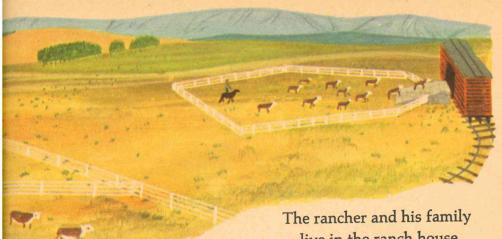
When calves are born, the cowboys must brand them. A brand is the mark of the ranch.



The cowboys stamp the brand onto the calf's skin with a hot iron.

Then if the calf gets lost, people can always tell what ranch it belongs to.

The brand tells them.



Sometimes cowboys camp out on the range.

They have a chuck wagon that carries their food and a cook to cook their meals.

When the cowboys are not riding the range, they live in a bunkhouse.

They keep their horses in a big pen called a corral.



live in the ranch house.

The rancher decides when to send cattle to market.

Then the cowboys herd them into a shipping pen.

The cattle walk up onto a platform and into a truck or into the cattle car of a train.

And off to market they go. For the cattle rancher's business is raising cattle to sell.

A ranch where people pay to come and spend their vacation is called a dude ranch.

There are many ranches in the West.

record



We play records

on a record player.

Sounds are recorded on a record by a recording needle.

The needle cuts a wavy groove around the record.

If we want to hear the sounds, we set the record spinning on the turntable of a record player.

We place the record player's needle onto the record.

It fits into the record's grooves.

Then the record player plays the sounds which were recorded.

Music or voices or any sort of sound can be on a record.

Records are sometimes called "discs" or "platters" because they are round and flat.

refrigerator



A refrigerator keeps food cold.
Keeping food cold
helps keep it from spoiling.
Years ago, the only refrigerators
were iceboxes.

The iceman put ice in the icebox.

As the ice melted, it cooled the food in the icebox.

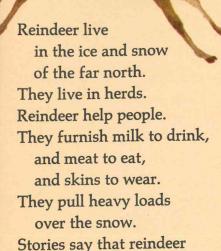
Now our refrigerators are run by electricity or gas.

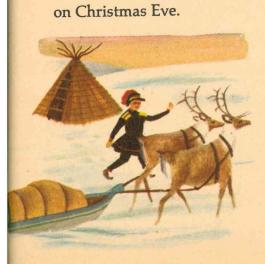
They have a special liquid in the working part.

The liquid turns to gas, then back to liquid, over and over again.

Each time it turns to gas it cools the food.

reindeer





pull Santa Claus' sleigh

reptile

A reptile is an animal.

It may have short legs.

Or it may have no legs at all.



Snakes are reptiles
that have no legs.
They wriggle over the ground.



Lizards are reptiles.

Most lizards have short legs.

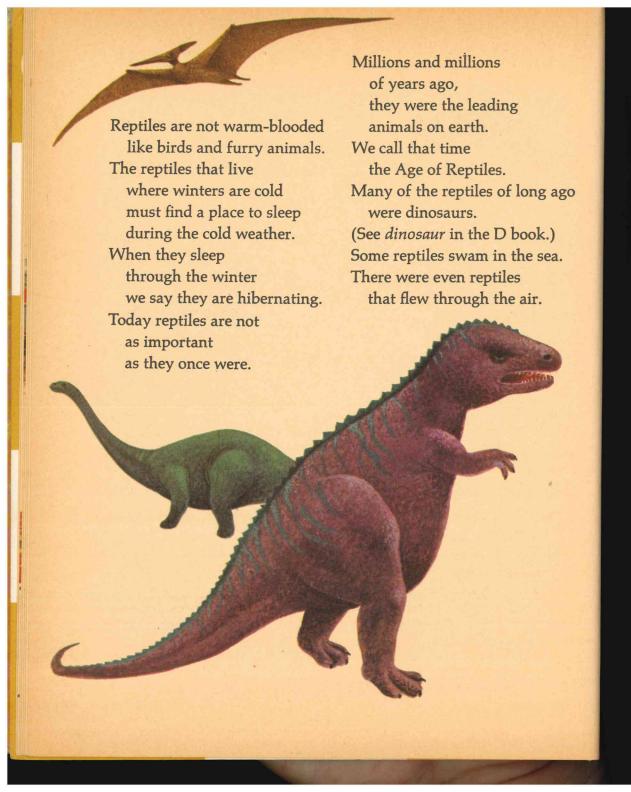
They can move very fast.



Turtles are reptiles that have hard shells. Some are called tortoises.



Alligators and crocodiles are reptiles, too.



rhinoceros



The rhinoceros is big and clumsy looking.

Of all four-legged animals, only the hippopotamus and the elephant are bigger.

are bigger.

The rhinoceros has
one or two sharp horns
sticking up on its nose

It has thick skin.

It lives where it is hot.

The rhinoceros
cannot see very well.

But it has a good sense of smell
and very good hearing.



African Rhinoceros



Rice is a food.

It comes from a rice plant.

We eat the seeds
 of the rice plant.

Rice grows well
 in a lot of water.

Water is kept standing
 in the fields
 where rice is grown.



These fields of rice are called paddies.

They have low walls around them to hold the water in.

Small rice plants are set into the wet fields by hand.

When the rice is ripe, the water is drained out.

In many countries rice is the food

that people eat

every day.



A river is
a large stream of water
running downhill
on its way to the sea.
Many little streams

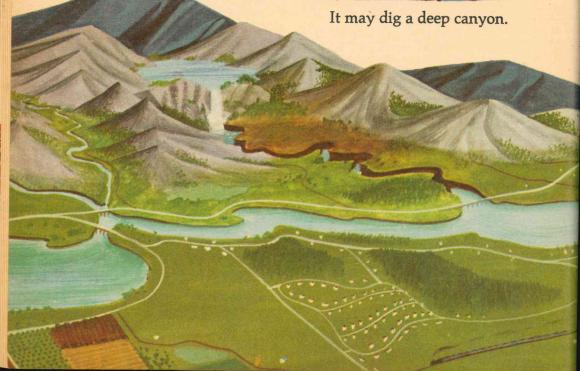
Many little streams join to make a river.

A river wears away the earth it flows over and makes itself a valley.

Water runs fast
when it runs down
a steep hill
or a mountain.

It can pick up sand
and pebbles
and bits of earth
and carry them along.
It can roll boulders.
As it moves earth and rocks,
a fast-flowing river
digs its valley
deeper and deeper.





Some rivers run through almost level land. They do not run as fast

as those that run down steep slopes.

They slowly wear away the banks along their sides.

Their valleys grow wider and wider.

Wide, slow rivers are easy for boats to travel on.

Rivers are often called "water highways" because so many boats travel on them.

The boats carry people.
They carry goods to market.

Many cities are built beside busy rivers.

When a river
runs into the sea
it drops its load
of earth and sand
and pebbles
picked up from the land.

Sometimes the load a river carries is washed far out to sea.

Sometimes it piles up on the bottom of the sea at the river's mouth.

In time it reaches above the water and becomes dry land.

This new land is called a delta.





A road is a broad path for cars or carts to travel on.

Some country roads are not used much.

No special surface or topping is put on them.

They are just dirt roads.

They may have deep ruts cut by the car or cart wheels.

People work on other roads to make them smooth.

They put a surface on them so that they will not get too muddy when it rains.

Many roads have crushed stone on top.

The rain goes through this surface and leaves it dry.

Some early roads through the woods had logs for a surface.



These roads were called corduroy roads.
They were bumpy!
But even long, long ago some good roads were made.



They were paved
with large, flat stones.
Later some roads
and city streets
were paved with bricks.

Roads paved with stone or brick were all right for horses and wagons and for marching men.



But they are not good
for automobiles.
With automobiles
people traveled
faster and farther.
And every year there were
more and more automobiles.

more and better roads.

Now most of our roads and streets are paved with concrete or with blacktop.

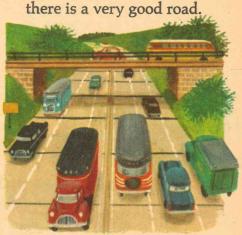
We needed



Concrete is poured
on a smooth bed
of crushed stone.
The poured concrete is thick
and wet and white.
It dries hard and smooth.



Blacktop is also spread on a smooth bed of crushed stone. It is thick and hot and sticky. Heavy rollers press it flat and smooth. When it dries



Busy main roads
are called highways.
(See highway in the H book.)
Many trucks and automobiles
travel on them.
We say the traffic is heavy.
(See traffic in the T book.)

robin

Robins are friendly birds.
They live near people.
A robin is often
the first bird we see
in spring
that we did not see
in winter.

We know the robin by its reddish breast. Robins build their nests of sticks and leaves, bits of string, grass and mud.



A robin's nest
may not be beautiful.
But it is strong.
The mother bird lays her eggs
in the nest.
The eggs are pale blue-green.
We call this color
"robin's egg blue."
Hungry baby robins hatch
from the eggs.

rock



Rock is the stuff
the earth's crust
is made of.
Much of it is in big
masses or layers.
But some is in small pieces.
Solid rock is so hard,
it seems as if
it could never be changed.
But it is changed.
Water carrying bits of rock
can break up big rocks.



Waves eat away rock cliffs beside a lake or sea.
Rivers cut their way down through solid rock.

Wind carrying sand
can carve rock
into strange shapes.
Glaciers can grind up rock.
(See glacier in the G book.)
Rock is always
being worn away,
slowly, slowly.
But slowly, slowly,
new rock is made.



On the bottom of the sea, layers of mud and sand with pebbles and shells in them are built up.

In time these layers become solid rock of different kinds.

Fiery-hot liquid rock oozes up through cracks from deep in the earth.

Some of it cools

underground.
It hardens into rocks of other kinds.

Some of the hot, liquid rock pours out of volcanoes.
We call it lava.
It hardens into still other kinds of rock.





There are many, many different kinds of rock.



rocket

A rocket is a long tube.

It can be made to rise
high into the air.

Fuel is burned
inside the rocket
to make gas.

Some of the hot gas
shoots out the back
of the rocket.

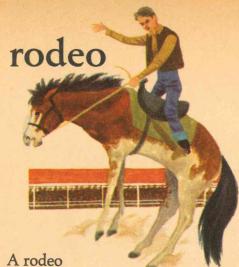
Some pushes forward inside.

It pushes the rocket ahead.

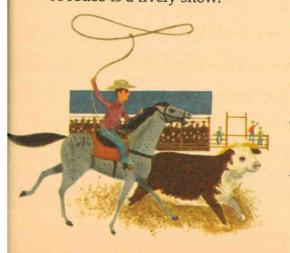


Fourth of July skyrockets have paper tubes. Inside is a powder to burn and form gas. When the skyrocket is high in the sky, another powder lights. When it burns. it looks like colored stars. Big rockets can go into space. Many big rockets have tubes made up of sections. One section burns its fuel and drops off. Then the next section does the same, and so on. The top of a big rocket is the most important part. It is called the payload. The payload may be a warhead. It may be a satellite. It may even be a space capsule with an astronaut inside. (See satellite and space

in the S books.)



A rodeo
is a cowboy show.
The cowboys do fancy riding
on horses and bulls.
They do fancy roping.
Cowboys pay to enter a rodeo.
If they win contests,
they win money prizes.
A rodeo is a lively show.





A rose is a pretty flower.

It may be red or pink,
yellow or white.

It may grow on a tall vine.

It may grow on a low bush.

Most kinds of roses have
sharp thorns on their stems.



A rose may grow wild and have five petals.

It may be grown in a garden and have many more than five petals.

Gardeners give their roses special food and care.

The rose belongs to a big family called the rose family.

Apples, pears, peaches, cherries, strawberries

and many other plants

belong to the rose family, too.

rubber

Rubber got its name because it could rub out pencil marks.

Rubber can stretch.

Rubber bounces.

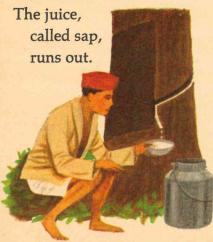
Rubber is strong.

All rubber used to come from rubber trees.

Today much of it is made from oil or gas.

But a lot of natural rubber is still used.

To get this rubber, men make cuts in the bark of rubber trees.



Men catch the sap in cups.
They pour it into tanks

They pour it into tank to thicken.



They make it into balls or sheets of rubber.
Then they send it to factories

Then they send it to factories where it is made usable.

Rubber is used in tires for automobiles, airplanes, tractors and bicycles.

We have rubber balls, or balls with rubber inside them.

(See ball in the B book.)

There are rubber hoses and boots and balloons.

Rubber is used in many, many ways.



